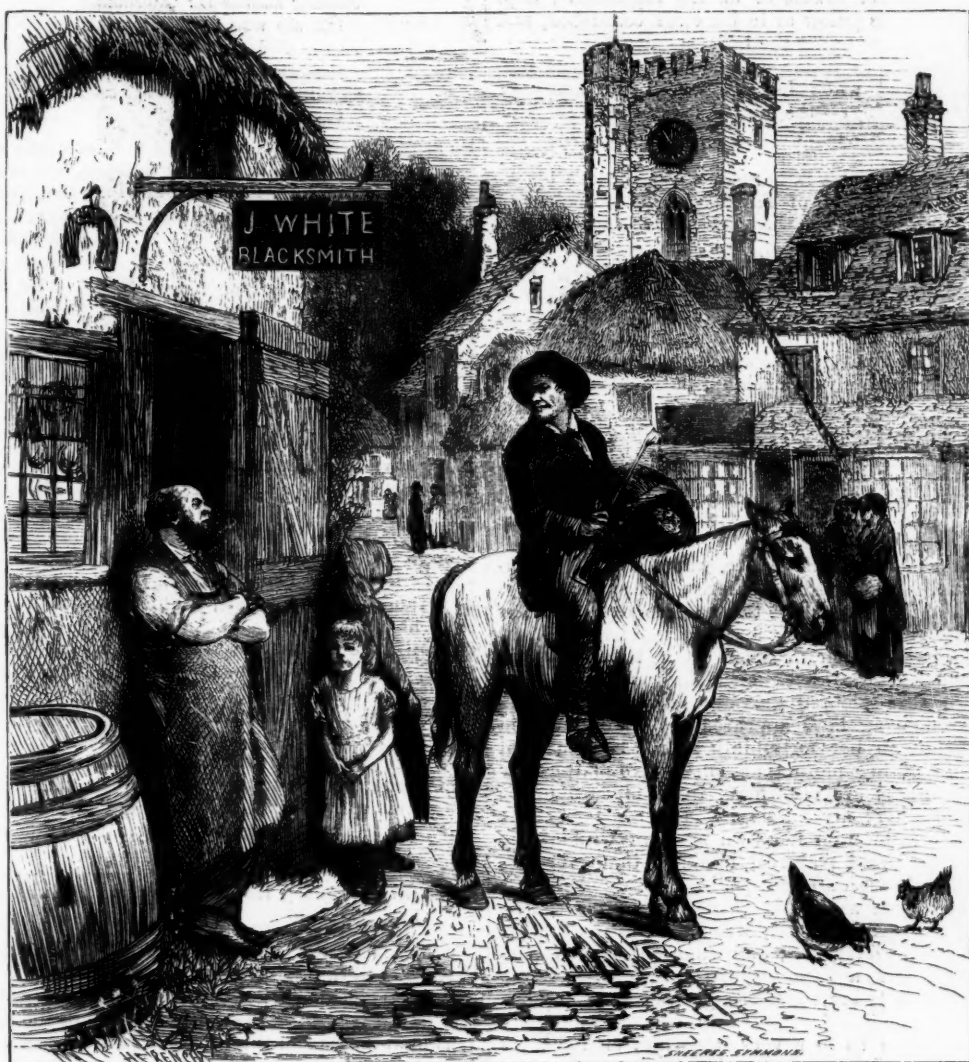


THE LEISURE HOUR.

BEHOLD IN THESE WHAT LEISURE HOURS DEMAND,
AMUSEMENT AND TRUE KNOWLEDGE HAND IN HAND.—*Conifer.*



JOE WHITE'S WORKSHOP.

"ENGAGED TO BE MARRIED."

CHAPTER I.

"COUSIN Lizzie," said Jack White, "there's ever so many fellows been bothering me to know if you're engaged. I told them I didn't know, but I'd ask you to-night. Are you?"

Now there are several persons whose existence is either mentioned or implied in Jack's speech. Let us endeavour to become better acquainted with them.

First, then, there is Jack himself. A personage belonging to that incongruous, all-important, much-to-be-dreaded order of mortals, distinguished in history by the name of boys. And Jack *was* a boy! Earnest-hearted, daring, up to every sort of mischief, and delighting in every sort of danger; always at hand when his absence was most anxiously desired, and never to be found when his presence was most urgently requested.

Jack was a wag, a poet, anxious to be a soldier,

certain he would be a sailor—in fact, he was everything in turn. He attended the science classes at school, and carried on his scientific practice at home. He dabbled in chemical experiments, especially such of them as had a "blow up" connected with them. He was fond of geology; and in selecting his specimens he cracked his stones on his white counterpane, washed his fossils in his toilet jug, dried them on his chamber towels or on his night-shirt, kept them under his pillow or in his clean collar-box, and hid all his chips under the bed.

Of the kind of litters and odours introduced into the household when he commenced the study of animal physiology—the moist or mummified remains found in all corners—the less I say of them here the better.

Next comes Jack's father. Joe White was a blacksmith in the village of Taynton, and was spoken of as a man well to do in the world. He owned his own shop, house, and garden, besides "a smart few" acres of good land, which he and his sons kept in a high state of cultivation. He had a large family of strong healthy boys, some of them settled away in business for themselves, and some of them still employed at home. Jack was the youngest of these. Mr. White had given all his sons the best possible education, and by his own example had made them feel that every honest man's best inheritance was the power in his own right hand. No one was more honourable or honoured in the village than he; and as it was his principle, as well as his wife's, that their desires must be kept within their income, he was a prosperous man.

Jack's mother, Mrs. White, was the living exemplification of the word "motherly." She was comely, round, and rosy. These three words described her mentally and physically; for her mind had no more ill-favoured, angular, or sallow places than her body, and she had the knack of looking at everything through rose-coloured glasses. Not many mothers of ten bouncing boys appeared as blooming as did Mrs. White in her forty-ninth year. Her husband had said of her more than once, "No matter how gloomy things are elsewhere, there is sure to be sunshine where my missis is. It's my belief she hatches sunshine on her own account, without the help of the most powerful luminary that ever was peeped at through a telescope."

It had been somewhat of a trial to good Mrs. White that son after son was added to the family, and no little daughter; and when a cousin of hers died and left a little orphan girl, Mrs. White gladly "took to her," and brought her up as her own child.

This brings us to a very important character in the blacksmith's family—Cousin Lizzie.

The introduction of *any* girl would have been a great event among these boys; but such a girl as this was took their hearts by storm. Lizzie was of a sweet and gentle nature, and she clung to her new relations with a very loving heart, and soon became the darling of the household.

At the time my story commences she was about twenty, a maiden with rippling brown hair, a clear healthy skin, red lips and blooming cheeks, and shy grey eyes. There was not a feature in her face perfect enough to have charmed a painter or fascinated a sculptor; but just a sunny, cheerful countenance, whose brightest charm lay in its ever-varying expression. It was the face of a modest, healthy, English

girl, and those who had looked at it once always wished to look at it again.

Lizzie had grown up her aunt's right hand. No matter what the work was, she was never content unless she was at the beginning, the middle, and the end of it.

"Baking bread, for dinner making
Handsome pies and tarts,
Nothing masters her painstaking,
Oh, she wins our hearts;
Always glad and always doing,
Goodwill to the fore,
Cleaning, washing, ironing, sewing,
Cousin Lizzie Moore."

So sang Jack the rhymster. His mother would shake her head over his everlasting scrapes, but over his many poetical effusions she would look troubled and anxious. Many a time she has held a consultation on him after some fresh production, and inquired, "Do you think he's too clever to live?" And then great, strapping, healthy Jack would get a little extra motherly care in consequence of his talents in her great concern for him. She would give him another blanket at night, and allot to him as a Benjamin's portion many a bite and sup of such dainties as she considered especially strengthening to the general constitution.

Lizzie had always been a great stay-at-home. She had grown up without forming any especial acquaintance among the young girls of the neighbourhood. She found the companionship of her cheery aunt (she had always said "aunt and uncle"), and her hearty though somewhat boisterous cousins, quite enough to satisfy her; and her general flittings were confined to a ramble in the woods, a quiet tea-drinking with aunt at some friend's house, or a grand shopping expedition to the nearest town on market days with uncle. But she was nevertheless glad and merry. She never felt the need of a change to raise her spirits; her heart was fully occupied in the happy pursuits belonging to home; and she had a sweet, soft voice of her own which was seldom silent. You could generally tell where she was busy by the sounds she sent forth. Jack had commenced an ode to her, which he meant to be something great, in this way:

"I watched the lark go singing up into the heights so dizzy,
And left off watching, feeling sure he could not match our
Lizzie."

Jack generally chose a tune first, and made his rhymes to fit the tune; and as he was especially fond of negro melodies with a grand chorus, he did not get on so well with the pathetic as with the comic. It is doubtless a sad thing for the poetical world that so many of Jack's best productions ended with the commencement; but however lamentable, I am compelled to record it as a fact.

Now I think I shall leave "the ever so many fellows" alone, and go on with my story.

Long before Lizzie was eighteen, it became pretty evident that even in these degenerate days there are many young men left who could admire female modesty and natural simplicity; and the house began to have a special attraction for several thriving young men in the neighbourhood, and the forge received pretty regular visits from some who had no manifest business connected either with iron or the anvil. Bunches of flowers and presents of fruit were often brought in by Jack for "the ladies;" and though

Lizzie was all unconscious, he cut some very curious capers in his endeavours to make his mother understand how matters stood. And then he allowed himself to get every possible benefit out of existing circumstances, and to enjoy himself thoroughly at the expense of those who were so ready to cultivate his acquaintance. He was invited here and driven there, and made much of generally, "altogether a very proper state of things," he said to himself.

Among the young men who found Jack's society attractive, and his talk of Cousin Lizzie a very edifying theme, was a young farmer named Mr. Fred Saunders. In times past, when Lizzie was a child, he had been the intimate friend of her elder cousins, and had gone in and out of the house at all times and seasons. As he had no sister or brother, the little Lizzie became a great pet of his, and she thought quite as much of him as of her relatives. Indeed, in many things she preferred him; for while Edward and Harry, and William and Sam, were rough and hearty, Fred seemed to possess a gentleness and refinement which they lacked.

But Fred's father died, and he came into the inheritance and management of the farm all too early. His mother, a great invalid, who dearly loved him, was fond of his bright cleverness and gentlemanly bearing, and thought no evil of his popularity with their neighbours. So by degrees Fred was drawn more and more into company that was not good for him. Lizzie did not know why his visits gradually ceased, though she felt sure her uncle was not pleased with Fred; but she often thought over the kindness and thoughtfulness he had shown towards her.

Then his mother was taken very ill, and died; and Fred seemed to come constantly to her aunt in his heavy trial, and was just his old, gentle, affectionate self. Not for long, however; his visits gradually ceased again, and at the time our story commenced she had not spoken to him for years.

But Fred Saunders had not forgotten her. He was twenty-five; and whenever he began to think of taking a wife to look after himself and his belongings, somehow Lizzie always came into his head. What a pleasant and good thing it would be, he argued with himself, if he could always have such a sunny face and busy pair of hands about him. Why, only to see her at church was enough to make one good. Mr. White certainly had been very officious about his habits and companions at one time, but he meant to be very steady and quite a business man when he was married. Certainly he must have Lizzie. So he determined to sound Jack first, and then speak to Mr. White, and ask his leave to speak to Lizzie herself.

Matters were just in this state when Jack burst into the pretty sitting-room with the startling announcement which heads this chapter; and if a small bomb-shell had all at once exploded in their midst, the general amazement could not well have been greater.

Not many days after this, as Mr. White was driving home from the market town, Fred joined him on horseback, and after a good deal of talk on other matters, managed to communicate his hopes and wishes. The good uncle had so altogether forgotten that Lizzie could grow up, that at first his only feeling was astonishment, and then he was sorry. He knew what a fine young man Fred was considered; he knew how prosperous he was. But give over Lizzie to him! it was monstrous! However, he never decided anything without consulting his wife. So he told Fred he must just wait till he had had time to

think and talk about it, and then he would let him have his opinion. Fred continued for some time longer to explain his plans and make his promises, but the blacksmith scarcely heard him, and felt relieved when he turned off towards his own home.

When Mr. and Mrs. White were alone that night, Mr. Saunders's disclosures were talked over. He found that she was not so astonished as he had expected her to be.

"I did not think much about Mr. Saunders, Joe; but I felt sure that Lizzie's sweet face was a great attraction to a good many, and I expected things would come to this pass soon. If only he had grown up as I once thought he would grow up, I should not mind so much, though it will be like cutting off my right hand to part with Lizzie."

"Do you think the child knows anything about his habits, Hetty, or has any fancy for him?"

"I think she is just as simple and pure as a little dove, Joe. She used to be very fond of him when they were children, but I have never heard her speak of him since his mother died."

"Well, wife, I think the only plan is to tell her about it. Of course we shall have to help her with our good counsel; but she may have no thought or wish to leave us; and if she chooses to stay, I should like to see the man that shall take her away from us. You had better talk to her the first chance you get over your sewing or something."

And so for that night the matter ended.

CHAPTER II.

THE little parlour at the blacksmith's cottage was a light and pretty room, simply and tastefully furnished. The evidence of female presence, both in design and in execution, was everywhere manifested. While nothing was too expensive or too good to use, everything looked as bright and dainty as in my lady's drawing-room. The carpet showed no spot or stain; the holland covers on chairs and couch were smooth and clean; the muslin curtains at the windows looked as though the irons had only just passed over them; and the flowers, here and there tastefully arranged in pretty vases, certainly had not long left off growing.

What a charm there is in that word freshness! In a countenance, on a dress, in a room, there is nothing so captivating as this. And the great secret of the charm consists more in the art of keeping things nice than in making things nice. Directly the person or the home becomes tumbled, dusted, draggled, or slovenly, its freshness is all gone, no matter what the original cost expended upon it. Depend upon it, a great deal more may be done in keeping things fresh by avoiding all daily habits which will soil or spoil than by any gigantic efforts put forth only on certain occasions. I will undertake to say there were many, many homes where more labour was expended, more washing and scouring done, and where there were more weary days and aching limbs, which never presented such a picture of sweet cleanliness and freshness as was always shown in the blacksmith's cottage.

In their bright little parlour Lizzie and her aunt were sewing. The one considerably puzzled how to disclose the matter with which she was burthened, and the other happily unconscious of the words which

must be spoken. Lizzie led the way to the subject herself by softly singing the words of the old song,

"My son is my son till he gets him a wife,
But my daughter's my daughter all my life."

"I am not so sure of that, Lizzie; there's many a mother loses her daughter when she gets married, quite as entirely as ever she loses her sons."

"But that won't be the case with your daughter, dear aunty. You are never going to lose me, you know. I am going to show you what a darling daughter can be always."

"You could not be *more*, my darling Lizzie; but I am very doubtful whether we can keep you always, for all that."

"Aunty, what can make you say that? Don't you believe I shall never want to leave you?"

"Well, perhaps the want will be all on another side, Lizzie. Don't you know that there's an old saying which says the best daughters always make the best wives? I think I could tell you of more than one person who is at this present time most anxious to change my good daughter into their own good wife."

"Oh, aunty, you are thinking of Jack's nonsense. Please don't, you know he is always saying something?"

"But this is really true, Lizzie. I have heard hints from more than one; and now Mr. Fred Saunders has spoken right out, and has asked our permission to talk to you about it. We are obliged to give him an answer, dear; and so I am come to you to know what we are to say."

It was pretty to see the colour which came and went on Lizzie's face and neck. She had started up at first like a frightened deer, with her great grey eyes stretched wide open; but before her aunt had finished, she had hidden her cheek on the motherly shoulder, and was encircled in the loving arms.

"You have not been like other girls, Lizzie dear," her aunt went on. "You have never laid yourself out to attract notice; and we might have thought our little violet was quite safe hidden away under the leaves. I have seen some young girls, Lizzie, whose voice, whose dress, and whose manners seemed to say to every passer-by, 'Here I am, look at me,' and who felt proud and flattered when they saw persons gazing after them, and would turn round and return the looks they met with complacent boldness; but it was a sad sight to see. When a young girl loses her gentle, retiring modesty, she gets rid of her greatest charm. But I am forgetting my subject, dearie. Look up and tell me what you think of the news I have brought you."

And Lizzie looked up, with a flushed face and tearful eyes. She quite understood that her aunt had kept on talking for the sake of giving her a little time to think; and how much rather she would have kept on listening than speak a word.

"Aunty," she said at last, "I am so surprised. Oh, why cannot things go on just as they were?"

"Dearie, you need not be troubled about it. No one shall take you from us till you wish to go; but you must think over the matter very seriously indeed. It is a very great responsibility to have the offer of an honest man's heart and home, and it must neither be refused nor accepted lightly."

"Aunty, talk to me a little about it. I will think over it all after you have done. What did you and my mother do?"

Mrs. White smiled; but she went on,—

"I will tell you what I really did do, Lizzie, when I received an offer of a like kind from your uncle. I had never been engaged before, mind. I believe such agreements between young men and women should be made with a view to marriage only. There ought to be something sacred in a betrothal, as there is in a marriage. I don't think much of those lasses who have been 'engaged ever so many times.' It is the fashion for young people nowadays to meet and to get a fancy for, or to show a preference for, each other, and then they engage themselves. They promise to devote their time to each other's pleasure; very often marriage is not thought of between them; they go out together, and the young woman expects from the young man a ridiculous devotion. He must be little short of her slave; must contrive all sorts of pleasures for her amusement, and put himself to every inconvenience to do her bidding. She, on her part, does her best to be amiable and agreeable always; to meet him always with smiles, and to look as pretty and as well dressed as she can. No matter what the faults on either side, they are never exhibited to one another. The slightest deviation from this code is enough to 'break it off,' and they give each other up, and are ready 'to engage themselves' again the next day.

"But perhaps matters go on smoothly, and the couple at last really get fond of each other, and for a time the infatuation lasts. They are ready to count all the world wrong, so that they may hold themselves blameless; they go on flattering and deceiving themselves, and living in an ideal world of their own creation. In this deluded state they marry, and only wake up to the knowledge of what their real characters are when it is too late. Then they discover that their tempers are incompatible, or that they are otherwise unsuited to each other.

"Well, to go on with my own story. Joseph White had been known to me for some time—in fact, we were both brought up in the same village. Although he had been apprenticed in the adjoining town some years before I became a servant, I had constantly heard his parents' proud report of his goodness and his steadiness. My first and only situation was with the rector of the town where he worked, and we occasionally met when I was out on an errand, and now and then at church. He was always friendly and polite, and seemed pleased to meet me or do anything for me; but, then, we were natives of the same village, and I had no thought that he entertained any particular favour towards me. If we met, it was by accident, not appointment. I am sure he would not have thought of waylaying me. As soon as he had made sure of his own wishes and the wisdom of them, he came and told me of it.

"I remember the day very well now. I had been home for a holiday to see dear Aunt Hetty; and just at the time I was starting on my return, Joseph came into the cottage, and said, quietly, 'I thought Hetty would be about starting, Mrs. Elton; and as I am going the same road, perhaps she will let me walk with her.'

"And on that homeward walk the whole secret came out. I cannot remember what led to it, or all the words he used; but he told me that there was nothing he more earnestly desired than to make me his wife. I was surprised and confused, but the sense of what he said remains with me to this day. He had been out of his time three years, and he hoped

in a short time to have saved enough to set up for himself in this place: would I consent to cast my lot with him, that we might be to each other all that man and wife could be all through life's journey? He knew we both had faults, but he felt we were both endeavouring to overcome them, and live as God's servants. And then he finished something like this: 'I have cared for you very much for a long time, and if you can give yourself to me I shall seek your happiness more than any earthly thing, and I shall feel I have the greatest blessing a young man can have, "a good wife, which is from the Lord." Don't give me any answer now; think about it, as I have done; and in a few days send me a few lines, telling me what is in your heart.'

"And I did think about it, dear Lizzie. I knew Joseph was all, and much more, than he had said to me. He was the comfort and stay of his parents; he had rescued and sheltered a young sister who had nearly lost her character by foolish companionship with those who 'lived to pleasure;' he was upright, honourable, and respected. I felt as I sat in the quiet of my own room that night, that Joseph had offered me much, and I asked myself what I had to give him in return. I had always greatly esteemed him, and now I found myself admiring his manliness and gentleness, and the longer I thought of him the more cause I found for my admiration.

"But every other feeling seemed swallowed up in

the solemnity and responsibility of having this young man's happiness in my hands. I might either become the bane or the blessing of his existence, by refusing or accepting his offer. Never before had I felt so much the real need of wisdom and help from on high, and never before had I sought for it more earnestly.

"Before a week was out, I sent Joseph this old, old letter, which he still keeps, and pretends to prize very much. See how yellow it is, and how faded the ink. Read it, child; your eyes are better than mine."

And Lizzie read:

"Dear Joseph,—I have thought very much over all you said to me, and I trust I have earnestly sought to depend only on God's guidance in making my decision. I cannot help feeling you think too well of me; but I am sure there is no one else to whom I would so willingly give myself. Dear Joseph, I will be to you all God helps me to be, and may He bless and direct us all our lives through.

"Your affectionate friend, HETTY ELTON."

"Now, dearie, I have gossiped long enough. If you let me go on any longer I shall get into Joseph's goodness, and then I shall never leave off. Don't talk to me now about yourself; take a day or two to think it over. And, my child, I know you will seek the aid of a better wisdom than ours before you decide."

THE CHEMISTRY OF THE HEAVENLY BODIES.

BY DR. J. H. GLADSTONE, F.R.S., PRESIDENT OF THE CHEMICAL SOCIETY.

CHAPTER I.—THE SUN AND THE SOLAR SYSTEM.

ASTRONOMY is, perhaps, the oldest of the sciences, and chemistry is not very young, yet the whole of our knowledge of the chemical nature of the heavenly bodies has been obtained during the last twenty years. It is true that the ancients found a connection between the sun and gold, the moon and silver, Mercury and quicksilver, Venus and copper, Mars and iron, Jupiter and tin, Saturn and lead; but these correspondences were purely imaginary. The two sources from which we have derived our recent information have been the analysis of the light which comes to us from the heavenly bodies, and our more exact knowledge of meteoric stones and their origin. We purpose in these papers to give the more important results and the general conclusions which have been arrived at.

It seems necessary at the outset to explain in a few words how the rays of light from an object may tell us of what it is composed. Newton showed long ago that if the rays of the sun or of a lamp be refracted, that is, bent out of their course by means of an angular piece of glass, some of the rays are more bent than others, and instead of white light, we get a prolonged image coloured like the rainbow—red at one side, and passing from that into orange, yellow, green, blue, indigo, and violet. Now if this white light be derived from a strongly-heated solid, liquid, or very dense gas, the colours blend perfectly into one another, and form what is termed the continuous prismatic spectrum. If, however, the light proceed from a strongly-heated vapour or gas, not too much

compressed, it is found to consist of certain rays which appear in the spectrum separated from one another, and each of which has its own colour; the rays from a given body are always the same, and occupy the same relative position, however the spectrum may be obtained. Thus the vapour of hydrogen gas gives three rays—one red, another bluish-green, and the third indigo blue; the vapour of sodium gives two yellow rays close together; while the vapour of iron sends off more than a hundred rays, principally green, orange, and blue, some being very much brighter than others. If, therefore, in looking through an angular piece of glass we recognise these particular rays, we know the nature of the substance that is emitting the light. But there is another peculiarity about vapours or gases. They are capable of absorbing the same rays as those they emit when more strongly heated. Thus, if we look at the coloured spectrum of an ordinary candle through a layer of vaporised sodium, instead of seeing the two yellow rays given out by the sodium we see two dark spaces in identically the same position. These phenomena are best seen if, instead of looking at the light through a round hole, we look at it through a narrow slit, and instruments termed spectroscopes are made for such observations. The narrow line of light is then resolved, as the case may be, into a continuous spectrum, separate coloured lines, or a spectrum crossed by dark lines. In this way Wollaston in 1802 observed that the light of the sun was deficient in certain rays, and Fraunhofer in 1814

made a map of these dark lines, naming the principal ones after the letters of the alphabet (see Frontispiece, fig. 1). Other observers have mapped thousands of these lines, and photography has been used for the purpose, as in the beautiful spectra recently obtained—not with the prism, but with a diffraction grating—by Rutherford in New York, and Norman Lockyer in London. It was not, however, until 1861 that the mystery of these dark lines was explained by Kirchhoff, who propounded a theory which is now accepted, that they arise from hydrogen, sodium, and iron, and other vapours, in front of the glowing mass of the sun. Three total eclipses followed soon afterwards and were taken advantage of by Janssen, Lockyer, and others, to examine more fully the solar atmospheres, while Huggins extended this method of analysis to the stars, nebulae, and comets. Other observers have successfully worked in the same field, and even the solar eclipse of last July has added to our knowledge of the sun's corona.

If we examine the sun with a telescope it appears to us as a sphere of white light, not uniform, but with some darker parts, called spots, and other brighter parts, termed faculae, both irregular and ever changing in form. The whole surface, too, is mottled with appearances that Nasmyth termed willow-leaves, which others have likened to rice grains or notes of admiration, but which may be best studied in the beautiful drawings recently made by Langley or the exquisite photographs of Janssen. Round this central orb, which is 860,000 miles in diameter, is a narrow fringe of red termed the chromosphere, extending outwards for 5,000 or 6,000 miles. This fringe is always irregular in outline; and it frequently rises into prominences of most fantastic form (fig. 9), which change under the eye of the observer, some reaching to the height of 180,000 miles. Beyond all this there is visible during an eclipse a corona of glory which extends to a great distance from the central orb.

While the telescope reveals this to us, the spectro-scope leads us to conclude that the glowing surface of the sun consists of the upper layers of clouds, which are sometimes heaped up in brighter masses, and at other times torn asunder by currents descending from the cooler atmosphere. Around and above these clouds are uncondensed vapours of the substances composing them, and at a certain distance from the central heat these vapours are sufficiently cool to absorb more of their special rays than they emit. From the dark spaces thus produced in the spectrum, we learn that this atmosphere of the sun consists of vaporised iron, sodium, nickel, cobalt, manganese and chromium, magnesium, calcium, barium, titanium, and hydrogen, and in smaller quantities copper, zinc, cadmium, potassium, aluminium, lead, strontium, cerium, uranium, vanadium, palladium, and molybdenum; and Mr. Lockyer believes that he has recently detected carbon, and minute quantities of silver and many other elements. It may be observed that the so-called golden beams of the sun indicate none of that metal, and what is more remarkable, there is no evidence of silicon or nitrogen, while the coloured vapours of free chlorine, bromine, iodine, sulphur, and selenium are manifestly absent. Professor Draper, of New York, has lately announced the discovery of oxygen among these metals, but the evidence is not conclusive enough as yet to warrant us in putting it down in the list. The red chromo-

sphere which extends beyond this gives a spectrum represented in fig. 2, composed of the bright lines of hydrogen, namely c, r, and those in the indigo; the sodium lines, d; three magnesium lines, b; and sometimes lines due to iron or other metals. These latter appear only in the neighbourhood of the white disc of the sun, while the higher prominences consist mainly of red-hot hydrogen. There are dark lines in the solar spectrum, the origin of which is as yet unknown, and especially one near d, indicated by the short line in the much enlarged drawing of fig. 10. This line is often visible at a great distance from the solar disc, and is hypothetically attributed to some element still lighter than hydrogen.

It depends upon very delicate conditions of temperature or pressure whether a gas makes itself evident by a luminous or an absorption band, and whether this band should be very fine or comparatively broad; and strange changes sometimes appear, especially about sun-spots, as in fig. 10, where the absorption bands of sodium are seen to widen with a luminous band in the centre of each. In other cases the dark lines, or still more frequently the bright lines of the chromosphere, appear to be confused or bent, as, for instance, in the three drawings of fig. 11. From this displacement has been deduced the remarkable fact that the masses of vapour are themselves travelling to or from the spectator with enormous velocity, a velocity which has been reckoned to be in one instance as great as 147 miles per second. This speed is so great that one of our best physicists, M. Cornu, of Paris, is disposed to call in the aid of an electric discharge.

The corona, which sheds a faint light far above these red prominences, appears to consist for the most part of solid or liquid particles, for the light is polarised as though by reflection, and gives a continuous spectrum. In previous eclipses the bright rays of hydrogen and the unknown solar element were visible among these particles, but in the recent eclipse the corona was seen as less extended and perfectly white, without the indications of a gaseous atmosphere.

Bearing these facts in mind, we may form a conception both of the physical and chemical nature of our great luminary. In many respects it differs widely from our own earth. That, as is well known, consists of a solid globe, hotter and perhaps liquid in the centre, covered over the principal part of its surface with liquid or frozen water, and surrounded by an atmosphere, not many miles high, which consists of oxygen and nitrogen, with smaller quantities of other gases and a variable amount of vapour of water, the latter constantly varying its condition, condensing into clouds, falling as rain, or even as solid hail and snow, and rising again as vapour. Now, of any solid or liquid nucleus of the sun we see nothing, and its intensely high temperature and low specific gravity—not much more than that of water— forbid us to think that in this respect it can at all closely resemble the earth. What we do see are the ever-changing clouds, but instead of being made, as they are on our earth, of one material, they condense from an atmosphere rich in iron, nickel, calcium, magnesium, and many other metals. We must therefore think of these clouds as metals condensing and subliming at a white heat, and imagine floating masses of calcium mist, and showers of iron hail. These also are driven about by storms, of which our greatest hurricanes give us no adequate conception. Masses

of vapour are driven into the upper atmosphere from the boiling metals below, causing a downrush of the cooler gases in some neighbouring part, and a diminution of its light. Above this region of white-hot, ever-changing metallic cloud the atmosphere becomes so much cooler as to be only red-hot for the next few thousands of miles, and consists mainly of hydrogen and the volatile sodium and magnesium vapours. But this atmosphere of hydrogen must really extend at least 200,000 miles, for any great rush from below renders it visibly red-hot sometimes for a height approaching the enormous distance above mentioned. This is the origin of those fantastic and rapidly changing flames already described. Of course, as they float away and cool they become invisible to us, and we have no means of knowing how far the hydrogen atmosphere really extends. We can scarcely doubt, however, that portions of metallic vapour driven upwards with such inconceivable force are frequently condensed in the cooler regions into liquid or solid particles, and may form that corona which under favourable circumstances reflects to us the glory of the central sun.

It will be seen that the substance of which our own clouds are made, and which forms so important a constituent of our earth, namely water, is not recognised among the constituents of the sun. Of course it could only exist there in any case as vapour; and at such a temperature the oxygen and hydrogen would probably be dissociated. It is more singular that nitrogen, which forms four-fifths of our atmosphere, has never been recognised. Oxygen, however, in a state of combination, may be present in large quantities in the sun, for silica and some other oxides are extremely difficult to vaporise. It is in fact very hard to say in what manner many of these elements may be chemically combined at so intense a temperature, or whether indeed, as has been supposed, some of our so-called elements may not be there reduced to simpler forms.

The question of the source of this heat is a most interesting and difficult one. We must not suppose that the sun resembles a furnace fire, in which the temperature is kept up by chemical action, for burning would imply the presence of supporters of combustion in enormous quantities, and we have no evidence of their existence near the glowing mass. Combustion also would soon involve the destruction of the sun itself, for it has been calculated that in every second of time the sun emits as much heat as the combustion of eleven thousand six hundred billions of tons of coal, and it has been further reckoned that if the central fire were made of coal and could burn completely away, it would not last more than 5,000 years. Of course this rate of combustion would imply such an age of the sun as would be insufficient to satisfy the geologists, and within the historic period we have no reason to think the sun has sensibly altered in size or temperature. It is most probable that the heat is sustained by the contraction of the sun's mass, under the influence of gravitation, a condition of things that is almost certainly taking place, and which physicists tell us is fairly adequate to account for the phenomena.

Closely connected with the sun and its atmospheres are the planets which revolve around it at various distances, but as these for the most part merely reflect to us the light of the sun itself, we obtain by means of the spectroscopic very little information as to their chemical nature. When we consider the great heat to which the intra-mercurial planet just

discovered, as well as Mercury itself, are exposed, we may fairly conclude that these two cannot be formed of very volatile materials. The condition of the surface of Venus is not yet understood, while our moon, on the contrary, has been frequently mapped and photographed, and presents to us a complicated series of volcanoes, at least 30,000 in number; but whether all these are extinct or whether chemical action is still taking place, remains for the present moment a matter of dispute. The chemistry of our own earth and atmosphere is known more or less to all our readers, and will only be referred to in these papers in the necessary comparisons with other members of the visible universe. Mars appears to be a world very similar to our own globe, with its aqueous clouds and even its covering of snow about the poles, which increases in winter and diminishes in summer. Jupiter and Saturn, on the contrary, appear to have a greater resemblance to the sun. It is possible that both these enormous globes are still sufficiently hot to give forth some light of their own. They are evidently covered with a dense mass of clouds, and it is believed that the absorption bands, both of water and of some unknown substance, have been detected in their light. The spectrum of Uranus, as drawn by Secchi, of Rome, is represented in fig. 3. It exhibits broad and dark absorption bands, the cause of which is at present utterly unknown. The light from Neptune is characterised also by similar but not identical absorption bands. The physical and chemical conditions of these two doubtless differ very considerably from those of the inner planets.

Besides the planets, the solar system comprises a multitude of those mysterious bodies called comets. The spectroscopic, in the hands of Huggins and others, has revealed to us the fact that the head of a comet is generally self-luminous—in fact, an incandescent gas. Fig. 4 represents the spectrum of Winnecke's comet of 1868. Strange to say the three luminous bands closely resemble, both in their position and in their manner of shading off on the more refrangible side, three bands which are well known in terrestrial lights; for they characterise the blue light which is seen in the lower part of a candle flame, and in many other positions in which carbon or its compounds are strongly ignited. Other comets give a similar appearance, thus suggesting the occurrence of the element carbon, which is so prominent on the earth in the animal and vegetable kingdoms. The tails of these erratic members of the solar system are probably composed of a multitude of liquid or solid particles at a distance from one another, for they simply reflect the light of the sun.

THE RIGHT HONORABLE EARL CAIRNS.

VISCOUNT Garmoyle, in the county of Antrim, and Earl Cairns, are the new titles which indicate that the present Lord Chancellor has been raised a step in the British Peerage. Of the Lord Chancellors who have held office since the Revolution, eight only previous to the recent creation were made earls. The last of these previous cases was Lord Cottenham's, on whom an earldom was conferred on his retirement from office in 1850. We take the occasion of the advancement of Lord Cairns, who so entirely enjoys the esteem of the legal profession and

of the community at large, to call attention to his public career and eminent services, which we are sure more than merit his higher rank and newly-acquired honours.

Earl Cairns is, as we believe, the first native of Ireland—there educated as well as born—who has held the Great Seal. The second son of William Cairns, Esquire, of Cultra, County Down, Hugh MacCalmont Cairns was born at Belfast, in December, 1819, and was educated first at the Belfast Academy, and then at Trinity College, Dublin, where he took first class in classics, besides obtaining other honours. Having chosen to follow the legal profession, he entered as a pupil, like a number of now eminent lawyers and judges, the chambers of the late Mr. Thomas Chitty, of King's Bench Walk, Temple; and having duly qualified he was called to the Bar at Lincoln's Inn in January, 1844. His great talents and industry speedily brought him practice, and indeed, at an early period of his career he became marked out in the minds of observers as destined for the high honours and preferment open to distinguished success at the Bar. When the young barrister appeared in the Equity Courts, the Conservative Government of Sir Robert Peel was in power, and Lord Lyndhurst, as Lord Chancellor, guided the decisions of the Court of Chancery. The disruption of the Conservative party on the Corn Law question was followed by its long exclusion from office. Mr. Cairns, nevertheless, loyal at once to his own convictions and to the political sentiments of his family, steadfastly adhered to its fallen fortunes, although he might thereby lessen his chance of promotion and increase the difficulty of obtaining what is the ambition of every aspiring lawyer, a seat in the House of Commons.

A general election occurring in 1852, Mr. Cairns, with the repute acquired by eight years' practice at the Bar, became a candidate for the representation of his native town of Belfast.

Prior to 1830 Belfast had been for a long period under the control of "extreme" Liberals. About that time a Conservative reaction set in among the younger men, and an opposition was organised, chiefly by the exertions of the candidate's father, Mr. William Cairns, and his future colleague in the representation of the borough, Mr. Richard Davison. Dr. Cooke the well known Presbyterian clergyman, having settled in Belfast in 1830, gave to this party the benefit of his counsel and eloquent support. By the year 1852 not only the town of Belfast but the entire province of Ulster had become strongly Conservative. The change was on religious more than on political grounds. The Presbyterians of Ulster had been largely under Unitarian influence before Dr. Cooke led the orthodox side. Belfast was therefore likely enough to favour the rising Conservative lawyer, supported as he was by the powerful influence of Dr. Cooke.

Besides his local claims, his qualifications to represent Belfast were his high legal character, his intimate acquaintance with mercantile jurisprudence, and, above all, his Protestant and Conservative principles. In his address, dated 21st May, 1852, his claims on the constituency and political opinions are thus indicated:—"Born and educated among you, it is long since my attention was directed by the example I most revered to the consideration of all that was calculated to advance the prosperity of my native town; and I have never ceased to take a warm interest in its continuous and unexampled progress. My political principles are

Conservative. In that term I include a zealous attachment to the Constitution under which we and our fathers have lived and flourished, and a resolve to maintain undisturbed its social balance of interests and opinions, and to preserve inviolate the Protestant institutions of the country as the only sufficient guarantee of civil and religious liberty." In addition and among other matters Mr. Cairns also advocated the principle of compensation to tenants for outlay on their holdings, a principle which has been recognised and adopted by the Government of which he is now a member, and embodied in an Act of Parliament.

The triumphant return of Mr. Cairns as one of the representatives of Belfast was an intense satisfaction to Dr. Cooke.* It was Dr. Cooke, indeed, as we are informed, who induced the son of his old and esteemed friend and parishioner, Mr. William Cairns, to become a candidate for the thriving Ulster borough. He had known Hugh MacCalmont Cairns from boyhood, and had watched with feelings of honest pride his brilliant talents and indomitable industry. Writing after the election of 1852 to Dr. Porter, his son-in-law and future biographer, Dr. Cooke says: "Mr. Cairns is a young man of the highest promise. A bright future is before him. If God only spare him health, I firmly believe he will attain to the highest honours England can bestow. He possesses all the elements of greatness, intellectual grasp, logical acumen, rare analytical power, accuracy and force of expression, and, best of all, thorough Christian principle. I feel proud of him, for he is the son of my oldest friend, and I have intently watched, and to some small extent helped to guide, his career." Events since 1852 have fully justified the sagacity and verified the predictions of the famous Presbyterian leader, whose influential labours in the cause of evangelical religion and Scriptural education have been so productive of benefit to the north of Ireland, and whose life Lord Cairns himself has said "was a large portion of the religious and public history of Ireland for the last fifty years."

It was not until the session of 1853 that Mr. Cairns made his maiden speech in the House. The occasion which first called him to the floor was one, it is true, of transitory interest, arising from a disturbance of the peace at a Clare election, and known as the Six Mile Cross Affray. It, however, served to show that in the member for Belfast the House had received an accession to its oratorical and argumentative power. For several sessions Mr. Cairns in the main restricted himself to discussions connected with Ireland. He took part in debates relating to the action of the income-tax in Ireland, to the condition of Presbyterianism in Ulster, and to the working of the *regium donum*. On this last subject he eloquently controverted the arguments of Mr. Bright, showing that the grant had gone on since the reign of James I, had been continued by the Irish Parliament, and adopted when Ireland was united to England.

With the discharge of his duties as a member of Parliament, and with a frequent participation in the debates of the House, Mr. Cairns carried on also a large and lucrative practice in the Court of Chancery. He was elected a Bencher of Lincoln's Inn, and duly attained

* Local tradition says that the young candidate owed no small part of his success to the help of "one who stood at his side," like Lady Russell in classic story. Although not actually canvassing, her gracious presence gained goodwill and repressed hostility even in the opposite camp.

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to the rank of Queen's Counsel. In 1856 he took a prominent part in opposition to a motion in the House of Commons for the opening of the British Museum and National Gallery on Sundays on behalf of the so-called moral and intellectual improvement of the working classes.

The claims of an ally so powerful and persuasive in the House of Commons, and of a lawyer of such

at the same time a more rapid and economical dispensation of justice was secured. It led the way to still further legal reforms; these we shall notice in due course.

Here we may refer to some of the Parliamentary occurrences which befell during the short period of Lord Derby's second Ministry, and in which Sir Hugh Cairns, as a member of the administration,



From a Photograph by J. Magill, Belfast.

Cairns.

unquestioned ability in his profession, could not of course be overlooked when the Conservatives under Lord Derby came into office for the second time. In 1858 Mr. Cairns received the honour of knighthood, and was made Solicitor-General.

In the session of 1858, before Sir Hugh Cairns was called to the office of Solicitor-General, he had laid before the House of Commons a measure for the amendment of the course of procedure in the High Court of Chancery. By this measure a decided step was taken towards the fusion of law and equity, and

took a prominent part. After the mutiny in India had been quelled it was resolved to transfer the government of that important dependency from the East India Company to the Crown. The India Bill, promoted by the Liberal Government, had already been rejected by the House of Commons, and on the 26th of March, 1858, India Bill No. 2, introduced by Mr. Disraeli, met with the same fate. The House, on the suggestion of Lord John Russell, then proceeded to deal with the subject by a series of resolutions; these passed, a basis was afforded for a

third India Bill, which in the hands of the present Lord Derby was carried through the House and became law. In this arduous work the assistance and advocacy of the Solicitor-General were invaluable to the Government. One of the most striking episodes, however, of the session of 1858 was the celebrated Oude debate, which arose out of the scheme of confiscation proposed by Lord Canning as Governor-General of India, and the energetic protest which it encountered from Lord Ellenborough, the Indian Minister of Lord Derby's Government. A formidable assault was in consequence made on the Ministry, both in the Lords and Commons. In the Commons the attack was led by Mr. Cardwell, and a memorable debate ensued. "No man of weight on either side," says an account, "fought more gallantly on this occasion than Sir Hugh Cairns. He was not supposed to be gifted with the happiest form of oratory. His manner was considered too cold and too polished. But when he rose to speak on this occasion he proved himself a greater master of the orator's art than he had been supposed to be. His speech was crowded with points, and deserves study as an able example of the business of Parliamentary rhetoric. In the whole four nights of the debate no more brilliant speech than that of Sir Hugh Cairns was heard." The speech was a powerful contribution to the failure of the Opposition and the victory of the Government.

The session of 1859 was distinguished by the attempts of the Conservative Government to carry a Reform Bill, a department of legislature hitherto left to the Whigs and Liberals. Is is enough here to note the result. The debate on the second reading of the Bill lasted nearly two weeks, and ended in the defeat of the Ministry. A dissolution of Parliament followed; the Conservatives returned from the country with increased numbers, but still without a majority. The new Parliament was opened on the 7th of June. A motion of want of confidence was soon afterwards proposed by Lord Hartington, and carried by a majority of thirteen. The Conservatives then retired from power, and with their retirement Sir Hugh Cairns closed for the time being his official career.

The revolution of the political wheel again brought the Conservative party into power in 1866. In the third Ministry of Lord Derby Sir Hugh Cairns held office as Attorney General, succeeding in this post Sir Roundell Palmer, his rival at the Chancery Bar. In October of the same year Sir Hugh was raised to the Bench as Lord Justice of Appeal. A few months thereafter he was elevated to the House of Lords as Baron Cairns of Garmoye, in the county of Antrim. This promotion was made with the view of adding to the debating power of the Government in the Upper House. Lord Chancellor Chelmsford was then engaged in promoting the "Court of Appeal (Dispatch of Business) Bill," and in this he received valuable aid and support from Lord Cairns.

Soon after his elevation Lord Cairns was engaged in a debate on the subject of the Irish Church in the House of Lords. His views on this question were well known as those of an ardent supporter of the policy of "No Surrender." At the Irish Church Missions anniversary breakfast in 1864 he had made a powerful speech, to show the identity of interest between the branches of the united Church of England and Ireland, and the great value of the parochial system in the cause of education and religion. When Lord Russell, on the 24th of June, 1867, moved in the House of Lords for a commission to inquire into the

funds of the Irish Church, "with a view to their more productive management, and to their more equitable application for the benefit of the Irish people," he found in the newly-created Peer a powerful opponent. The array of arguments advanced by Lord Cairns against Lord Russell's motion were summed up by him in these words: "It is because I feel the gravity of these objections to the scheme of the noble earl, because I see in its completion injustice and even confiscation; in its execution, strife, bitter and enduring strife and animosity, and because, above all, I see in its result danger to property, and peril, perhaps not immediate but not less certain peril, to the Established Church of this country, that I beseech your lordships to give no assent and no encouragement to the motion of the noble lord in its present form."

The retirement of Lord Derby from the Government, on the ground of failing health, led to the Premiership of Mr. Disraeli, and among other consequent changes in the Cabinet was the substitution of Lord Cairns for the late Lord Chelmsford as Lord Chancellor. He was sworn into the high office on the 2nd March, 1868. Soon after his occupancy of the woolsack, Lord Cairns was called upon to deal with the Irish Church question in a new form. In the session of 1868 a resolution was carried by the Liberal Opposition, headed by Mr. Gladstone in the House of Commons, that the Irish Church should cease to exist as an established church. As a consequence of this vote the Irish Church Suspension Bill was introduced, carried through the Commons, and passed on to the Lords. The object of this Bill was to prevent the creation of vested interests in view of the further legislation on which the Liberal leader had resolved. In June a great debate took place in the House of Lords. After Lord Russell had been heard in support of the Bill, Lord Chancellor Cairns delivered a speech on the opposite side, which, as has been justly said, "fully maintained, if it did not enhance, his reputation as a master in the arts of luminous statement and subtle argumentation." This oration was received and read with great interest in Belfast and in the province of Ulster. It embodied the best possible defence that could be made on behalf of the Irish Church; subsequently it was printed and widely circulated throughout the north of Ireland.

No advocacy of the Irish Church, however powerful, could retard the work of disestablishment. The large majority obtained by Mr. Gladstone in the election of 1868 was finally decisive on the question. In December Lord Cairns gave place to Lord Hatherley as Lord Chancellor under the new Liberal Government. In June, 1869, and as Leader of the Opposition in the House of Lords, Lord Cairns, resolute in opposition to the last, delivered a forcible and eloquent speech against the Irish Church Bill. When further effort was unavailing, acting in the interests of the Church, it fell to him, as Leader of the Opposition in the Lords, to arrange terms of compromise with Lord Granville as to the glebe lands and surplus income of the Church, and by which he secured considerable pecuniary benefit to the Protestant community of Ireland.

We have already referred to the efforts of Lord Cairns as a law reformer, made so early as 1858, and now we may briefly notice the progress of legal reform so far as effected under his auspices. In this work he has had as a coadjutor his immediate pre-

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decessor on the woolsack, Lord Selborne. In 1867 Lord Selborne (then Sir Roundell Palmer) advocated in the House of Commons the fusion of the courts of law and equity into one court of a uniform jurisdiction, and capable of taking any business without distinction. The Judicature Commission, on which Lord Cairns acted as a prominent member, and which, indeed, derived much of its impulse from him, recommended the fusion of law and equity, and the organisation of a final court of appeal detached from the House of Lords. In the session of 1873, soon after his acceptance of office as Lord Chancellor, Lord Selborne introduced a measure of legal reform sketched on these lines. He was assisted and supported by Lord Cairns, whose influence prevailed with the Peers to surrender their right as the ultimate court of appeal, it being then made to appear that they could no longer exercise it with a view to the welfare of the country. The Bill went down to the Commons and became law. One of the first steps of the new Conservative Ministry, with Lord Cairns as Lord Chancellor, in the session of 1874, was the announcement of a measure to carry to completion the Act of Lord Selborne, by extending its provisions to Scotland and Ireland. This measure was carried through the Lords by large majorities, and was only prevented from passing the Commons—much to the disappointment of Lord Cairns—by the necessity of passing the Public Worship Regulation Bill. In the session of 1875, a Bill, substantially the same measure, was introduced into the Lords by Lord Chancellor Cairns, but this Bill had not the smooth progress of its predecessors. It was stoutly contested by its opponents; it, however, got through committee and stood for report. Among the English Peers, time and reflection, it seemed, had created a feeling of regret that they had surrendered their legal privilege as a court of ultimate appeal. This feeling was strongly shared by leading members of the English Bar, and by Scotch and Irish lawyers. The opponents of the change in the Lords were headed by Lords Redesdale and Penzance and the Duke of Buccleuch. Such was the state of matters when, on the 8th March, the Lord Chancellor announced the withdrawal of the Government measure, on the ground that the opposition in store for it was so great from both parties, that to carry it through would be impossible. The immediate point gained by the malcontents was the non-extension of the new appellate tribunal to Scotland and Ireland; as regarded England, it would come into effect, as provided by Lord Selborne's Act, in November following. Lord Cairns, not less than Lord Selborne, was dissatisfied with the failure of their conjoint scheme; but the former saw that his best course was to fall in with the evident bent of opinion, and to retain the House of Lords as the court of ultimate appeal as heretofore, for the whole of the United Kingdom. For this purpose he proposed the repeal of the clauses in the Act of 1873, providing for a court of final appeal, and the substitution instead of a court of intermediate appeal. These recommendations he explained in a speech on the 9th of April, 1875. A purely temporary and provisional measure was accordingly passed in the session of 1875, the effect of which was to suspend the abolition of the jurisdiction of the House of Lords till the 1st of November, 1876. Early in the session of 1876 Lord Cairns brought forward a new measure which retained unchanged all the privileges of the

House of Lords. The Bill also provided a number of Lords of Appeal, consisting of Peers who had filled high judicial offices; and as an addition thereto, it enacted that there should be two other Lords of Appeal selected on account of their high qualifications at the Bar or on the Bench. These were to sit in the House of Lords, with the rank of baron, and, each with a salary of £6,000 a year, to hold that rank for life. When this Bill, embodying such provisions, became law, Lord Cairns had the satisfaction of completing the scheme of legal reform introduced by Lord Selborne, though in doing so he had so far to conform to Conservative tendencies as to continue an ancient name for what was really a new institution.

Before the question of the court of ultimate appeal was finally decided, the new High Court of Judicature held its first sitting early in November, 1875, and the entire scheme came into complete operation in December, 1876. The object of these reforms was to reconstruct our ancient judicial system, in which many anomalies had grown up, and to adapt it to the requirements of modern times. This object was brought about in the main by assimilating Common Law to Chancery procedure. For, indeed, it was the opinion of Lord Cairns, as of other legal thinkers, that the principles of law and equity are not discordant, but harmonious. Reforms were therefore brought about, first, by an extension of jurisdiction and uniformity of procedure; secondly, by a new distribution of judicial force; and, thirdly, by the establishment of an effective court of appeal.

The new judicial system now in operation, other departments of law in turn came also under the scope of Lord Cairns's reforming activities. He has endeavoured to deal with the law relating to patents; but here effective legislation has been postponed, owing to radical differences of opinion on this controverted subject. A Land Transfer Bill passed into law in the session of 1875. His lordship has now in hand a measure for the reform of bankruptcy, besides which, other schemes are in contemplation with a view to the improvement of the administration of justice throughout the country.

It was not, therefore, without reason that Lord Cairns, at the Ministerial dinner at the Mansion House in November, 1877, referred to the great judicial structure as an unfinished house. "We have now for some years been," he said, "and we are still in the midst of transition, and I hope I may say of real and substantial improvement. We have accomplished much, but much remains to be done." The aim of Lord Cairns in these long-continued and herculean labours is to confer upon the community at large a consistent and harmonious system of legal administration, combining the utmost possible economy with despatch and efficiency.

The energies of Lord Cairns have been up to the present time absorbed in labours purely legal and political. Deeply versed in ecclesiastical law, he has, both as consulting counsel and judge, had to deal with and give judgment in ecclesiastical cases. Some years ago, it will be remembered, in connection with Lord Salisbury, he settled the London Chatham and Dover Railway arbitration award. In the winding up of the affairs of the unfortunate Albert Insurance Company he acted as arbitrator; while more recently, as presiding judge in the Court of Appeal, it fell to him to bring the conflicting judgments of the various arbitrators of the European Company into harmony with the decisions of the Courts of Equity.

Yet, while Lord Cairns has with constant absorption pursued the work which has fallen to him as a politician, a judge, a legal reformer, and a minister of State, he has not failed to interest himself in the philanthropic and evangelistic enterprises of our time. To the beneficent efforts to rescue destitute children from vice and ignorance he has lent full countenance and support. The "coffee public-house" movement has also benefited by his advocacy. And as to his lordship's sympathy with missionary efforts in distant lands, and his sense of the duty of the Church to promote such efforts, we cannot do better than quote the following from an address recently delivered by him at a meeting of the Bournemouth branch of the Church Missionary Society. "We are ourselves," said Lord Cairns, on that occasion, "so far removed from what are called heathen countries, the work to be done at home is so overpowering and so great, Christendom is so much cut up and divided into sects and denominations, that we are apt to forget the duty which is laid upon the Church with regard to heathendom. Let me illustrate it in this way—let us go back eighteen hundred and forty years, and let us go to that upper room in Jerusalem, where a hundred and twenty men assembled after the ascension of our blessed Saviour. Now suppose those hundred and twenty men had said, 'We are conscious of the great revelation that has been made to us; we have seen the Saviour and heard the Word that proceeded out of His mouth; we know the end for which He came into the world; we have found salvation through Him; we should endeavour to regulate our lives according to His teaching; but we do not see that there is any occasion to go any further; we are forming a society among ourselves, and we shall not do anything but pursue our regular avocations; we shall take no steps to spread the knowledge of this great salvation among others.' Suppose those hundred and twenty men had said that. I do not ask you what would have become of this country, or what the state of this country would have been. I put that altogether aside, and I ask you to consider, Would those men have been fulfilling their duty, and would they, in the sight of God, have stood justified by their conduct? Clearly they would not; clearly they had laid upon them a command to go into the world and to preach the Gospel, and clearly that command would have been disobeyed. What is the difference in point of principle between the case of those hundred and twenty men who then, you may say, formed Christendom, and the millions, it may be, of men who form Christendom at the present day? Is it any less a wrong done to those who are outside Christendom if we, who are now millions, take no steps to communicate the Gospel to them, than it would have been a wrong if those hundred and twenty men had taken no steps to communicate the Gospel to the heathen at that time?"

We have referred to the part Lord Cairns took in opposing a motion in the House of Commons in 1856 for the opening of museums on Sundays. In April last the same subject was discussed in the House of Lords. In the course of the discussion the Lord Chancellor remarked that "there was not a capital in the world where the Sunday was more completely the property of the labouring classes as a day of rest than in London. If the Government opened public institutions on Sunday they could not stop there; they could not say that private institutions should

not be opened. If the State once entered on a course of that kind, the only point at which it could stop short was the point reached in foreign capitals, where there was absolutely no protection to the working man in the observance of the Sabbath." He resisted the motion, too, on higher grounds. "Nothing," said Lord Cairns, "could be more injurious to the intellectual, the moral, and the physical welfare of the country than that anything should be done by the State which could lend countenance to the idea that they were anxious to get rid of the observance of the Sabbath as now enjoyed." These words are worthy alike of a statesman and a philanthropist, and we trust they will be recalled on any future attempts to remove the safeguards which now fence round the Sabbath as a day of rest to the working man.

Late in the recent session of Parliament the Lord Chancellor introduced into the House of Lords a measure for establishing a system of intermediate education in Ireland. This measure was received with approval and speedily became law. Among the many discussions on the Eastern question the debate in the Upper House on the constitutional principles involved in the employment of Indian troops out of India was one of the most remarkable. It fell to Lord Cairns to explain and defend the action and policy of the Government. In his prolonged address on this occasion he displayed, to cite the words of the "Times," "the courage of a statesman and the acumen of a consummate lawyer." Nor is it unlikely that this great and successful speech procured for him a share in the honours which are usually conferred when a great policy has been accepted or sanctioned by Parliament.

We may only, in conclusion, add that Earl Cairns holds the office of Chancellor of his own University of Dublin, and that in 1862 the University of Cambridge conferred upon him the honorary degree of LL.D., and the University of Oxford in 1863 that of D.C.L.

J. H.

THE SACK OF WHEAT.

BY FRÉDÉRIC BASTIAT (THE COBDEN OF FRANCE).

THE picturesque and pleasant town of Mont-de-Marsan, *chef-lieu* of the department of the Landes, was the scene of an imposing ceremony on the 23rd April of this year. On that day was unveiled a statue of Frédéric Bastiat, the most distinguished native of that region in modern times. His works on political economy have made his name famous far beyond his own country, and will yet bear fruit in France, where sound teaching on such subjects is most needed. M. Léon Say, member of the Republican Government, and himself an eminent political economist, presided, and delivered an oration worthy of the occasion.

Frédéric Bastiat contended wisely and skilfully against two opposite classes. He maintained the cause of science and experience against the Protectionists on the one hand, and against the Socialists, led by Proudhon, on the other. Both these powerful opponents advocated the cause of the *producers*, the Protectionist selfishly seeking the interest of the capitalist, the Socialist claiming for the labourer a greater share in the wealth produced. Between the

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two the interest of the consumers, the great body of the nation, including the operatives themselves, was too apt to be overlooked or underrated. For them Bastiat pleaded, and his pleas combined the results of true science with efforts for national interests against class interests, for free trade against protection, a conflict now closed in England, but yet to be fought out in France. Bastiat had followed with deep sympathy the movement which ended in the repeal of the Corn Laws, and was well acquainted with Villiers, Wilson, Fox, John Bright, and the other advocates of Free Trade. In his own works he had conveyed the same truths, but in a manner and style original and effective. A black marble tablet is inscribed with the titles of his three most important works, "Cobden and the League," "Economical Sophisms," and "Economical Harmonies." But he was constantly, by speech and by his pen, diffusing the knowledge which he thought essential for the enduring prosperity of France. The clear light and genial tone of his teaching may be seen in the short extract on the subject which heads this article.

THE SACK OF WHEAT.

Mathew, though poor as Job, and obliged to gain his livelihood from day to day, was yet a proprietor (by what heritage I know not) of a fine plot of uncultivated ground. He much wished to clear it. "Alas!" said he, "making ditches, raising fences, digging up the soil, removing brambles and stones, preparing it, sowing seed—all this might bring me something to live upon in a year or two, but certainly not for to-day and to-morrow. I cannot give up myself to its cultivation before having accumulated some provisions to live upon until the harvest, and I know by experience that preparatory labour is indispensable to render any actual labour really productive."

The good Mathew did not confine himself to making these reflections. He resolved to continue his daily work and to make savings from his wages in order to buy a spade and a sack of wheat, things without which one must renounce the finest projects of agriculture. He managed so well, he was so active and so steady, that at length he saw himself in possession of the valuable sack of wheat. "I will carry it to the mill," said he, "and I shall have there something to live upon till my field is covered with a rich harvest."

As he was going off, Jerome, his neighbour, came to borrow his treasure.

"If you lend me this sack of wheat," said Jerome, "you will render me a great service, for I have a very lucrative work in view, which it is impossible for me to undertake for want of provisions to live upon until it is finished."

"I have been in the same circumstances," said Mathew, "and if now I have bread secured for some months I have gained it by

the work of my arms. Upon what principle of justice can it now be devoted to the realising of your enterprise and not of mine?"

One may suppose that the bargaining was long. It ended, however, and on these terms:

First, Jerome promised to restore, at the end of a year, a sack of wheat of the same quality and of the same weight, without the missing of a single grain. "This first clause of our agreement is quite just," said he, "for without it Mathew would not be lending but giving away the wheat."

Secondly, he undertook to return five litres of wheat above the hectolitre. "This clause is not less just than the other," thought he, "for without it Mathew would render me a service without any compensation; he would endure a privation; he would give up his fine enterprise, and even be putting me in the way of accomplishing mine, and of enjoying during a year the fruit of his savings, and all this for nothing. As he puts off his clearing, and puts me in a position of doing a profitable work, it is quite natural that he should in some degree participate in the profits which I shall owe to his sacrificing his own purpose."

On his own side Mathew, who was no great scholar, reasoned thus: "As in virtue of the first clause," said he, "the sack of wheat will come back to me at the end of the year, I shall be able to lend it again; so I will lend it again and again for ever. Yet I cannot deny that it will be eaten long before that. See how strange it is that I shall be continually the owner of a sack of wheat, although what I lent has been consumed long ago. But this is explained thus: it will be consumed in the service of Jerome. It will put Jerome in a position of producing one of a superior quality, and consequently he will be able to return me a sack of wheat, or its value, without experiencing any loss; nay, the contrary. And as for me, the value of it must become my property so long as I do not use it myself. If I had made use of it for clearing my land, I should probably have found it again in the form of a fine harvest, yet with risks, instead of which I lend it and have it again returned to me."

"I draw from the second clause another lesson. At the end of the year there will come back to me five litres of wheat above the hundred litres that I had lent. If, then, I continue at my daily work, and save some of my wages as I have already done, in time I shall be able to lend two sacks of wheat, then three, then four, and when I have thus placed out a great number of them in order to live on the amount of these gains of five litres coming in from each of them, I shall be able to take a little repose during my old age."

"But, what! shall I not in this case be living at the expense of another? No, certainly; as it is acknowledged that by lending I render a service, I improve the work of my borrower, and I derive but a small part of the excess of production due to my loan and my thrift. It is a wonderful thing that I can thus realise a retirement which hurts nobody and cannot be justly envied."

We have given the translation as literally as possible, but no rendering can convey the point and brightness of the original. A writer like Bastiat is needed in our own country for the popular exposition of many elementary truths of economic science.

LETTERS FROM THE ROCKY MOUNTAINS.

BY ISABELLA L. BIRD, AUTHOR OF "SIX MONTHS IN THE SANDWICH ISLANDS," ETC.

XVI.

Dr. Hughes's, Lower Canyon, Colorado, Dec. 4th.—Once again here, in refined and cultured society, with harmonious voices about me, and dear, sweet, loving children whose winning ways make this cabin a true English home. "England, with all thy faults, I love thee still!" I can truly say,

"Where'er I roam, whatever realms I see,
My heart, untravelling, fondly turns to thee."

If it swerved a little in the Sandwich Islands, it is true to the Pole now! Surely one advantage of travelling is that, while it removes much prejudice against foreigners and their customs, it intensifies tenfold one's appreciation of the good at home, and, above all, of the quietness and purity of English domestic life. These reflections are forced upon me

by the sweet child-voices about me, and by the exquisite consideration and tenderness which are the atmosphere (some would call it the hothouse atmosphere) of this house. But with the bare, hard life, and the bare, bleak mountains around, who could find fault with even a hothouse atmosphere, if it can nourish such a flower of Paradise as a sacred human love?

The mercury is eleven degrees below zero, and I have to keep my ink on the stove to prevent it from freezing. The cold is intense—a clear, brilliant, stimulating cold, so dry that even in my threadbare flannel riding-dress I do not suffer from it. I must now take up my narrative of the nothings which have all the interest of *some things* to me. We all got up before daybreak on Tuesday, and breakfasted at seven. I have not seen the dawn for some time, with its

amber fires deepening into red, and the snow peaks flushing one by one, and it seemed a new miracle. It was a west wind, and we all thought it promised well. I took only two pounds of luggage, some raisins, the mail bag, and an additional blanket under my saddle. I had not been up from the Park at sunrise before, and it was quite glorious, the purple depths of McGinn's Gulch, from which at a height of 9,000 feet you look down on the sunlit Park 1,500 feet below, lying in a red haze, with its pearly needle-shaped peaks, framed by mountain-sides dark with pines—my glorious, solitary, unique mountain home! The purple sun rose in front. Had I known what made it purple I should certainly have gone no farther. Then clouds, the morning mist, as I supposed, lifted themselves up rose-lighted, showing the sun's disc as purple as one of the jars in a chemist's window. The clouds having permitted this glimpse of their king, came down again as a dense mist, the wind chopped round, the mist began to freeze hard. Soon Birdie and myself were a mass of acicular crystals; it was a true easterly fog. I galloped on, hoping to get through it, unable to see a yard before me; but it thickened, and I was obliged to subside into a jog-trot. As I rode on, about four miles from the cabin, a human figure, looking gigantic like the spectre of the Brocken, with long hair white as snow, appeared close to me, and at the same moment there was the flash of a pistol close to my ear—so close, indeed, that my hair was singed. Almost simultaneously I ejaculated "Coward!" for I recognised "Mountain Jim" frozen from head to foot, looking a century old with his snowy hair. It was "ugly" altogether, certainly, a "desperado's" grim jest. However, I accepted it as such. He stormed and scolded, dragged me off the pony—for my hands and feet were numb with cold—took the bridle, and went off at a rapid stride, so that I had to run to keep them in sight in the darkness, for we were off the road in a thicket of scrub, looking like white branch-coral, I knew not where. Then we came suddenly on his cabin, and dear old Ring, white like all else; and the "ruffian" insisted on my going in, and he made a good fire, and heated some coffee, raging all the time. He said everything against my going forward, except that it was dangerous; all he said came true, and here I am safe! Your letters, however, outweighed everything but danger, and I decided on going on, when he said, "I've seen many foolish people, but never one so foolish as you—you haven't a grain of sense. Why, I, an old mountaineer, wouldn't go down to the plains to-day." I told him he could not, though he would like it very much, for that he had turned his horses loose; on which he laughed heartily, and more heartily still at the stories I told him of young Lyman, so that I have still a doubt how much of the dark moods I have lately seen was assumed.

He took me back to the track; and the interview which began with a pistol-shot, ended most pleasantly. It was an eerie ride, one not to be forgotten, though there was no danger. I could not recognise any localities. Every tree was silvered, and the fir-tree tufts of needles looked like white chrysanthemums. The snow lay a foot deep in the gulches, with its hard, smooth surface marked by the feet of innumerable birds and beasts. Ice bridges had formed across all the streams, and I crossed them without knowing when. Gulches looked fathomless abysses, with clouds boiling up out of them, and shaggy mountain summits, half seen for a moment through the

eddies, as quickly vanished. Everything looked vast and indefinite. Then a huge creation, like one of Doré's phantom illustrations, with much breathing of wings, came sailing towards me in a temporary opening in the mist. As with a strange rustle it passed close over my head, I saw, for the first time, the great mountain eagle, carrying a good-sized beast in his talons. It was a noble vision. Then there were ten miles of metamorphosed gulches—silent, awful—many ice bridges, then a frozen drizzle, and then the wind changed from east to north-east. Birdie was covered with exquisite crystals, and her long mane and the long beard which covers her throat were pure white. I saw that I must give up crossing the mountains to this place by an unknown trail; and I struck the old trail to the St. Vrain, which I had never travelled before, but which I knew to be more legible than the new one. The fog grew darker and thicker, the day colder and windier, the drifts deeper; but Birdie, whose four cunning feet had carried me 600 miles, and who in all difficulties proves her value, never flinched or made a false step, or gave me reason to be sorry that I had come on. I got down to the St. Vrain Canyon in good time, and stopped at a house thirteen miles from Longmount to get oats. I was white from head to foot, and my clothes were frozen stiff. The women gave me the usual invitation, "Put your feet in the oven;" and I got my clothes thawed and dried, and a delicious meal consisting of a basin of cream and bread. They said it would be worse on the plains, for it was an easterly storm; but as I was so used to riding, I could get on, so we started at 2.30. Not far off I met Edwards going up at last to Estes Park, and soon after the snowstorm began in earnest—or rather I entered the storm, which had been going on there for several hours. By that time I had reached the prairie, only eight miles from Longmount, and pushed on. It was simply fearful. It was twilight from the thick snow, and I faced a furious east wind loaded with fine, hard-frozen crystals, which literally made my face bleed. I could only see a very short distance anywhere; the drifts were often two feet deep, and only now and then, through the blinding whirl, I caught a glimpse of snow through which withered sunflowers did not protrude, and then I knew that I was on the track. But reaching a wild place, I lost it, and still cantered on, trusting to the pony's sagacity. It failed for once, for she took me on a lake and we fell through the ice into the water, one hundred yards from land, and had a hard fight back again. It grew worse and worse. I had wrapped up my face, but the sharp, hard snow beat on my eyes—the only exposed part—bringing tears into them, which froze and closed up my eyelids at once. You cannot imagine what that was. I had to take off one glove to pick one eye open, for as to the other, the storm beat so savagely against it that I left it frozen, and drew over it the double piece of flannel which protected my face. I could hardly keep the other open by picking the ice from it constantly with my numb fingers, in doing which I got the back of my hand slightly frostbitten. It was truly awful at the time. I often thought, "Suppose I am going south instead of east? Suppose Birdie should fail? Suppose it should grow quite dark?" I was mountaineer enough to shake these fears off and keep up my spirits, but I knew how many had perished on the prairie in similar storms. I calculated that if I did not reach Longmount in half an hour it would be quite dark, and that I should be so frozen or para-

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lysed with cold that I should fall off. Not a quarter of an hour after I had wondered how long I could hold on I saw, to my surprise, close to me, half smothered in snow, the scattered houses and blessed lights of Longmount, and welcome, indeed, its wide, dreary, lifeless, soundless road looked! When I reached the hotel I was so benumbed that I could not get off, and the worthy host lifted me off and carried me in. Not expecting any travellers, they had no fire except in the bar-room, so they took me to the stove in their own room, gave me hot grog and plenty of blankets, and in half an hour I was all right and ready for a ferocious meal. "If there's a traveller on the prairie to-night, God help him!" the host had said to his wife just before I came in.

I found Evans there, storm-stayed, and that—to his great credit at the time—my money matters were all right. After the sound and refreshing sleep which one gets in this splendid climate, I was ready for an early start, but, warned by yesterday's experience, waited till twelve to be sure of the weather. The air was intensely clear, and the mercury *seventeen degrees below zero*! The snow sparkled and snapped under one's feet. It was gloriously beautiful! In this climate, if you only go out for a short time you do not feel cold even without a hat, or any additional wrappings. I bought a cardigan for myself, however, and some thick socks, got some stout snowshoes for Birdie's hind feet, had a pleasant talk with some English friends, did some commissions for the men in the Park, and hung about waiting for a freight train to break the track, but eventually, inspired by the good news from you, left Longmount alone, and for the last time. I little thought, that miserable, broiling day on which I arrived at it with Dr. and Mrs. Hughes, of the glories of which it was the gate, and of the "good time" I should have. Now I am at home in it; every one in it and along the St. Vrain Canyon addresses me in a friendly way by name, and the newspapers, with their intolerable personality, have made me and my riding exploits so notorious, that travellers speak courteously to me when they meet me on the prairie, doubtless wishing to see what sort of monster I am! I have met nothing but civility, both of manner and speech, except that distraught pistol-shot. It looked icily beautiful, the snow so pure and the sky such a bright, sharp blue! The snow was so deep and level that after a few miles I left the track, and, steering for Storm Peak, rode sixteen miles over the pathless prairie without seeing man, bird, or beast, a solitude awful even in the bright sunshine. The cold, always great, became piteous. I increased the frostbite of yesterday by exposing my hand in mending the stirrup, and when the sun sunk in indescribable beauty behind the mountains, and colour rioted in the sky, I got off and walked the last four miles, and stole in here in the coloured twilight without any one seeing me.

The life of which I wrote before is scarcely less severe, though lightened by a hope of change, and this weather brings out some special severities. The stove has to be in the living-room, the children cannot go out, and, good and delightful as they are, it is hard for them to be shut up all day with four adults. It is more of a trouble than you would think for a lady in precarious health that before each meal eggs, butter, milk, preserves, and pickles have to be unfrozen. Unless they are kept on the stove, there is no part of the room in which they do not freeze.

It is uninteresting down here in the foothills. I long for the rushing winds, the piled-up peaks, the great pines, the wild night noises, the poetry and the prose of the free, jolly life of my unrivalled eyrie. I can hardly realise that the river which lies ice-bound outside this house is the same which flashes through Estes Park, and which I saw snow-born on Long's Peak.

Estes Park, Dec. 7th.—Yesterday morning the mercury had disappeared, so it was 20° below zero at least. I lay awake from cold all night, but such is the wonderful effect of the climate, that when I got up at half-past five to waken the household for my early start, I felt quite refreshed. We breakfasted on buffalo beef, and I left at eight to ride forty-five miles before night, Dr. Hughes and a gentleman who was staying there conveying me the first fifteen miles. I did like that ride, racing with the other riders, careering through the intoxicating air in that indescribable sunshine, the powdery snow spurned from the horses' feet like dust! I was soon warm. We stopped at a trapper's ranch to feed, and the old trapper amused me by seeming to think Estes Park almost inaccessible in winter. The distance was greater than I had been told, and he said that I could not get there before eleven at night, and not at all if there were much drift. I wanted the gentlemen to go on with me as far as the Devil's Gate, but they could not because their horses were tired; and when the trapper heard that he exclaimed, indignantly, "What! that woman going into the mountains alone? She'll lose the track or be froze to death!" But when I told him I had ridden the trail in the storm of Tuesday, and had ridden over six hundred miles alone in the mountains, he treated me with great respect as a fellow-mountaineer, and gave me some matches, saying, "You'll have to camp out anyhow; you'd better make a fire than be froze to death." The idea of my spending the night in the forest alone, by a fire, struck me as most grotesque.

We did not start again till one, and the two gentlemen rode the first two miles with me. On that track, the Little Thompson, there a full stream, has to be crossed eighteen times, and they had been hauling wood across it, breaking it, and it had broken and refrozen several times, making thick and thin places—indeed, there were crossings which even I thought bad, where the ice let us through, and it was hard for the horses to struggle upon it again; and one of the gentlemen who, though a most accomplished man, was not a horseman, was once or twice in the ludicrous position of hesitating on the bank with an anxious face, not daring to spur his horse upon the ice. After they left me I had eight more crossings, and then a ride of six miles, before I reached the old trail; but though there were several drifts up to the saddle, and no one had broken a track, Birdie showed such pluck, that instead of spending the night by a camp fire, or not getting in till midnight, I reached Mr. Nugent's cabin, four miles from Estes Park, only an hour after dark, very cold, and with the pony so tired that she could hardly put one foot before another. Indeed, I walked the last three miles. I saw light through the chinks, but, hearing an earnest conversation within, was just about to withdraw, when Ring barked, and on his master coming to the door I found that the solitary man was talking to his dog. He was looking out for me, and had some coffee ready, a large fire, and

a hot blanket to wrap round me. It was very pleasant. He said that Evans told him that it would be most difficult for any one of them to take me down to the plains, but that he would go, which is a great relief. According to the Scotch proverb, "Better a finger off than aye wagging," and as I cannot live here (for you would not like it), the sooner I leave the better.

The ride to Evans's was very eerie. It was very dark, and the noises were very unintelligible. Young Lyman rushed out to take my horse, and the light and warmth within were delightful, but there was a stiffness about the new régime. Evans, though steeped in difficulties, was as hearty and generous as ever; but Edwards, who had assumed the management, is prudent, if not parsimonious, thinks we wasted the supplies recklessly, and the limitations as to milk, etc., are painfully apparent. A young ex-Guardsman has come up with Evans, of whom the sanguine creature forms great expectations, to be disappointed doubtless. In the afternoon of yesterday a gentleman came who I thought was another stranger, strikingly handsome, well-dressed, and barely forty, with sixteen shining golden curls falling down his collar; he walked in, and it was only after a careful second look that I recognised in my visitor the redoubtable "desperado." Evans courteously pressed him to stay and dine with us, and not only did he show the most singular conversational dexterity in talking with the stranger, who was a very well-informed man, and had seen a great deal of the world, but, though he lives and eats like a savage, his manners and way of eating were as refined as possible. I notice that Evans is never quite himself or perfectly comfortable when he is there, and on the part of the other there is a sort of stiffly-assumed cordiality, significant, I fear, of lurking hatred on both sides. I was in the kitchen after dinner making rolled puddings, young Lyman was eating up the relics as usual, "Jim" was singing one of Moore's melodies, the others being in the living-room, when Mr. Kavan and Mr. Buchan came from "up the creek" to wish me good-bye. They said it was not half so much like home now, and recalled the "good time" we had had for three weeks. Lyman having lost the can, we have no milk. No one makes bread; they dry the venison into chips, and getting the meals at all seems a work of toil and difficulty, instead of the pleasure it used to be to us. Evans, since tea, has told me all his troubles and worries. He is a kind, generous, whole-hearted, unsuspicious man, a worse enemy to himself, I believe, than to any other.

Varieties.

KAFIRISTAN.—Between the Indus and the Cabul rivers, on the slopes and ridges of the Hindu Koosh, are a number of states, independent, or owing only nominal allegiance to the Ameer of Afghanistan. Of these the most important is Kafiristan. The name is formed from the Arabic, Ka-fir, or unbeliever, and the Persian istan, place, or land. Horses, mules, asses, and camels, being unknown in Kafiristan, burdens are carried by bullocks, or on men's backs, chiefly by a tribe of people called Baris. These people are the pariahs of the country. They carry on all the mechanical trades, such as blacksmiths, weavers, carpenters, cutlers, the Kafirs considering arms and agriculture as the only occupations which are worthy of their attention. The Si'ah-posh Kafirs, or Black-clad unbelievers, are so called from the black goat-skin garments which they wear. Their land has been a

mountain fastness where they have been enabled to preserve their independence in a marvellous way. Often has their subjugation been attempted by the great conquerors who have played their part from time to time in the history of Asia, but failure has universally ensued. Timour tried to reduce them; the emperor Baber made forays into their valleys; the Mohammedan chiefs of the mountain principalities on their borders confederated against them. On all these occasions the Kafirs suffered more or less severely, yet still survived as an independent nation. All around Mohammedanism prevails. Kashgar, Kunduz, Afghanistan, the petty states north-west of Peshawur, all have been Mohammedanised; while Kafiristan stands forth like an island amidst the surrounding deluge. Retaining its ancient heathenism, it has refused submission to the arrogance of the Moslem. What a position, then, for Christianity to occupy! Entrenched there amidst those rocky eminences, it might from thence act with converting power on the outlying portions of the Mohammedan kingdoms around, and kindle a light in the very heart of Mohammedan Asia. There is surely no enthusiasm in supposing that this isolated country has been conserved from the domination of Mohammedanism for some special purpose. Captain Raverty, of the 3rd Native Bombay Infantry, published "Notes on Kafiristan" many years ago, in the "Journal of the Asiatic Society of Bengal." He concludes his notices with the following paragraphs:—"In summing up the character of this unsophisticated and highly interesting race, I may remark that they appear by all accounts, and even from the descriptions of their enemies, to be of a merry and sociable disposition, and, though quick to anger, are as easily appeased. Hospitable to a fault, they treat their guests more kindly than brothers. Even their enemies allow that they are as sincere in their friendship as in their enmity, are faithful to their agreements, and hold boasting, lying, and duplicity in sovereign contempt. Lieutenant Wood, in the interesting work, 'A Journey to the Oxus,' remarks concerning them (in which I most cordially agree) that 'they resemble Europeans in being possessed of great intelligence, and from all I have seen and heard of them I consider they offer a fairer field for missionary exertion than is to be found anywhere else on the continent of Asia. They pride themselves on being, to use their own words, brothers of the Farangis; and this opinion of itself may hereafter smooth the road for the zealous pioneers of the gospel.'" Let it be remembered that the Si'ah-posh regard the Afghans as their most relentless foes. They sometimes enter into a truce of friendship with the people of Badakshan and Chitral, when they exchange weapons, and until these are returned they remain at peace; but with the more cruel and bigoted Afghans this is rarely done. The Afghans are constantly plundering the Kafirs, and carrying off their women, who are said to be very beautiful. According to the report recently published from the Russian Military Department, the Kafirs number above 150,000; and nearly 500,000 of other tribes in the mountains are independent of the ruler of Cabul.

AFGHANISTAN.—The entire population subject to the Ameer of Afghanistan is estimated at 6,000,000. The people mostly live in large villages, usually walled and fortified, from the unsettled state of the country. Of the most important towns, Cabul has 60,000 inhabitants, Kandahar about 40,000, Herat 45,000, Maimene 18,000, Balkh 17,000, Gami 15,000, Andkui 15,000, Khulm 15,000, Jelalabad 10,000, Dushak 10,000, Kalgilsai 10,000, and Sheikh Nassur 9,000.

SCOTTISH MANNERS.—Two Scotchmen of eminence, the Earl of Rosebery, eminent in "the sporting world," and Professor Shairp, eminent in the literary world, have recently lectured their countrymen on lack of manners. Lord Rosebery believes in "the civilising influence of industrial art." He would like to see every large town with its public library and museum. Professor Shairp looks more to the civilising effects of literature, and advises lectures on poetry and the study of the best poets. He does not think that anything could be done in schools to improve the manners of the young. We differ from the learned professor as to this. At the opening of the Great Exhibition in 1851, a Chinaman took his place among the ambassadors and representatives of foreign nations. He bore himself with as much dignity and behaved with as much courtesy as the most aristocratic diplomatist in the brilliant circle. Yet he was only the carpenter of a Chinese junk then in the Thames, whom the directors of the Exhibition borrowed for pictorial effect in the procession. On surprise being expressed at his demeanour to an old Shanghai merchant, his reply was that "every Chinaman is taught manners at school, as part of his ordinary education." Here is a hint to Professor Shairp and to the School Boards, in England as well as in Scotland.

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